

Archaeological Evidence for Sustainability of Coast Salish Sea Urchin Harvesting

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Keywords: sea urchins, archaeology, palaeoecology, exploitation rates, selective harvesting, Coast Salish

Sea urchin and abalone populations in the Salish Sea declined dramatically in the past 25 years, apparently due to intense commercial harvesting of urchins in the 1980s. It has nonetheless been suggested that “natural” levels of urchins and abalone would also have been small, due to predation by the large number of sea otters that populated the Pacific Northwest prior to the European fur trade. The abundance of these species before the fur trade is unknown. Coast Salish harvested urchins before Europeans arrived, but appear to have imported otter fur and abalone shells from the Pacific Coast, suggesting that these species were already scarce in the Salish Sea. Was this a result of exploitation? Archaeologists have long noted large distinct lenses of thousands of broken urchin tests and spines within shell middens, suggesting periodic feasting separated by long intervals of casual harvesting. Urchins are long-lived, and increasingly fecund as they age, hence intensive, selective harvesting of the largest urchins is unsustainable. Here we test the size-selectivity of harvesting by examining the test size and inferred age of urchins recovered from the Watmough shell midden (Lopez Island, WA) including an urchin lens and strata in which urchins were mixed with other fauna.